FIG. 1

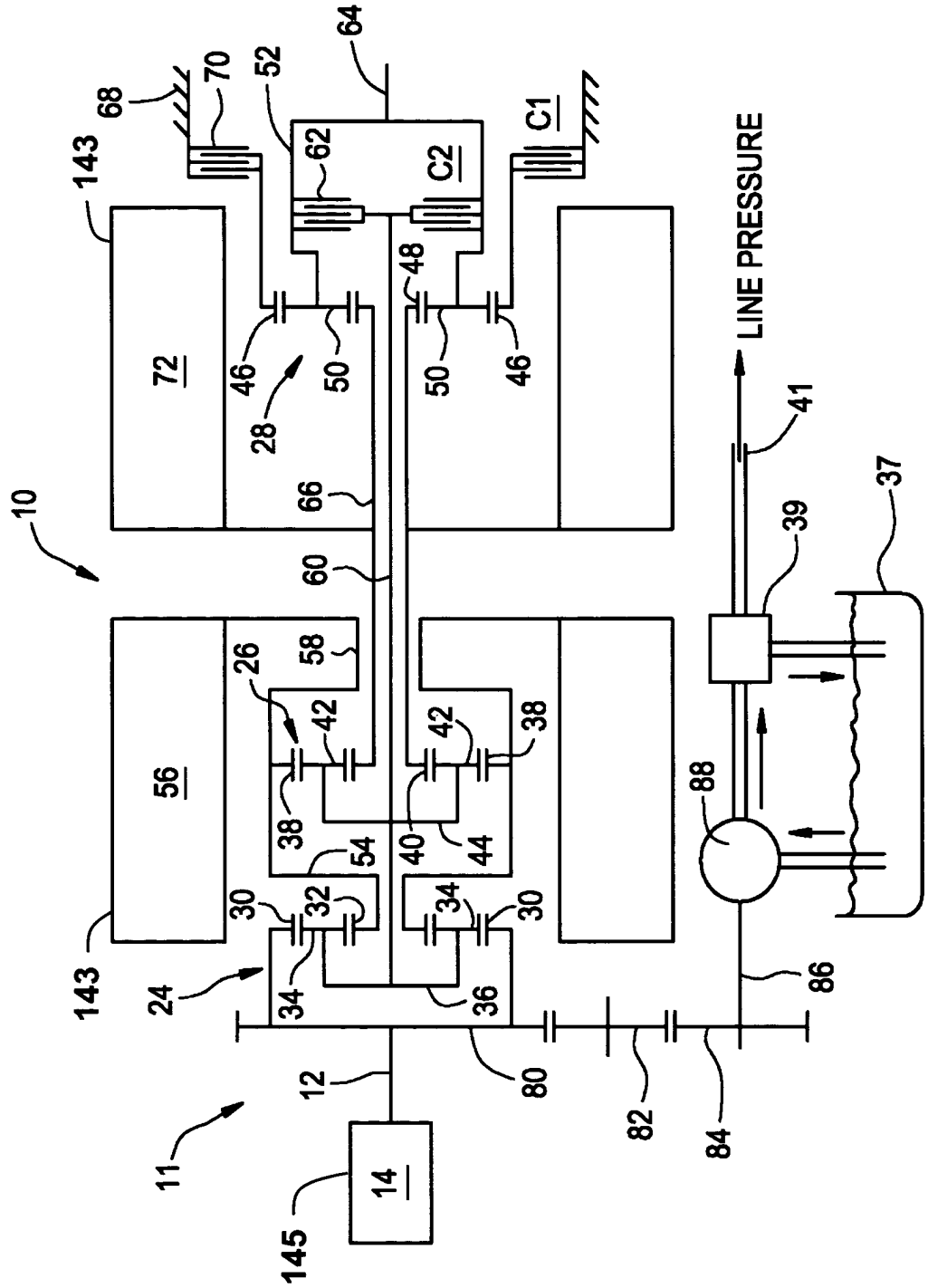

LINE PRESSURE
C1
C2
72
56
14
10
11
12
24
26
28
30
32
34
36
37
38
39
40
41
42
44
46
48
50
52
54
58
60
62
64
66
68
70
80
82
84
86
88
143
145

FIG. 2

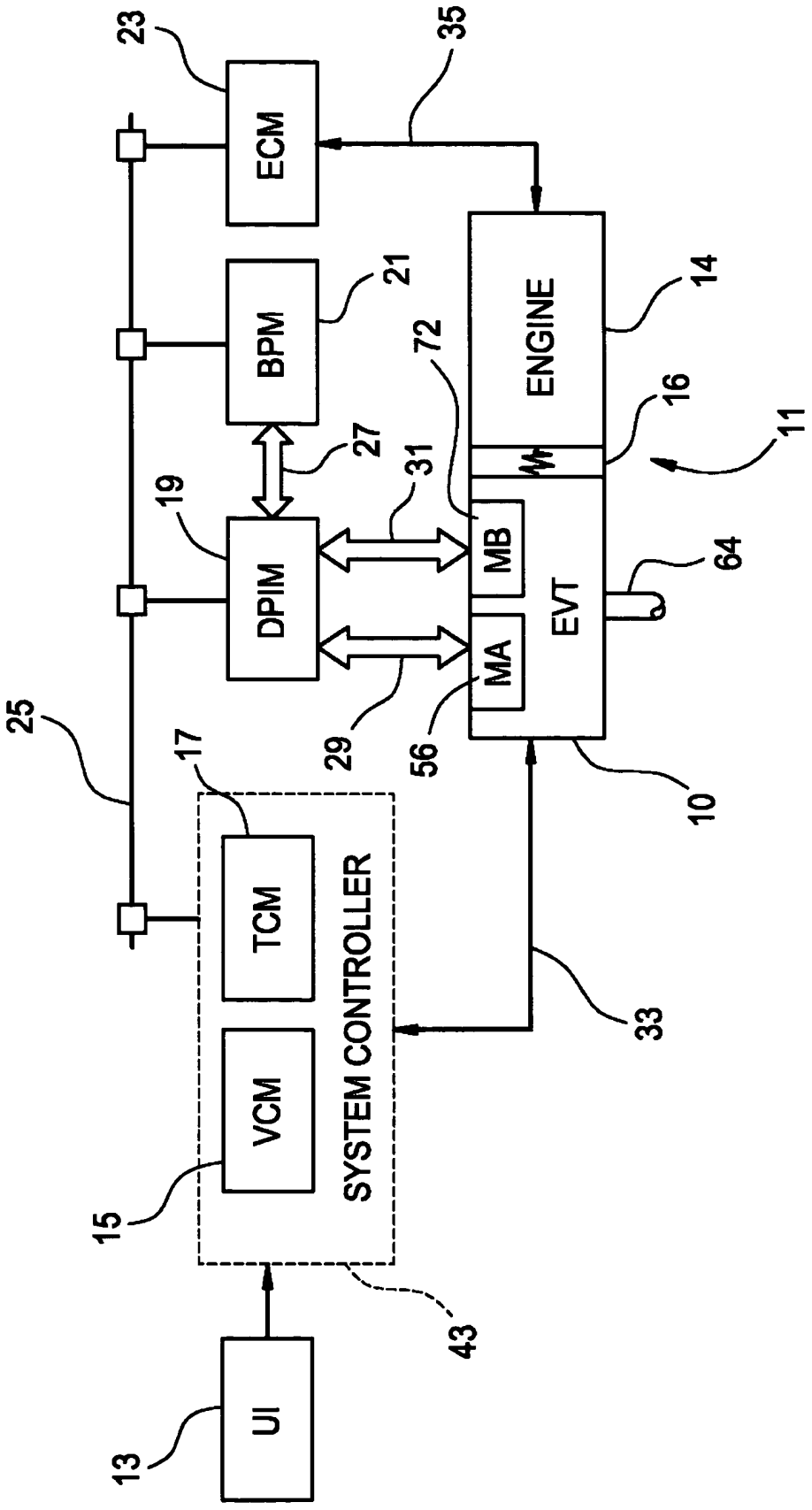
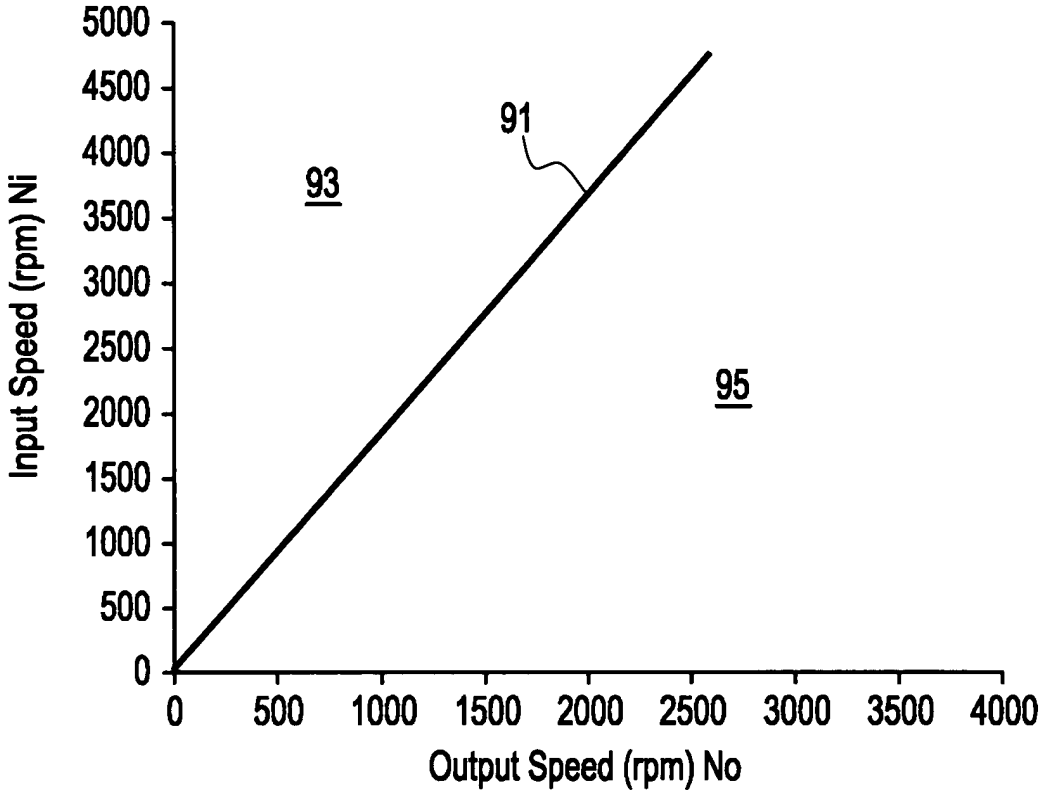

23
ECM
35
21
BPM
72
ENGINE
14
16
11
27
31
19
DPIM
MB
EVT
64
MA
29
56
10
25
17
TCM
SYSTEM CONTROLLER
33
VCM
15
43
13
UI

FIG. 3


5000
4500
4000
3500
3000
2500
2000
1500
1000
500
0
Input Speed (rpm) Ni
91
93
95
0
500
1000
1500
2000
2500
3000
3500
4000
Output Speed (rpm) No

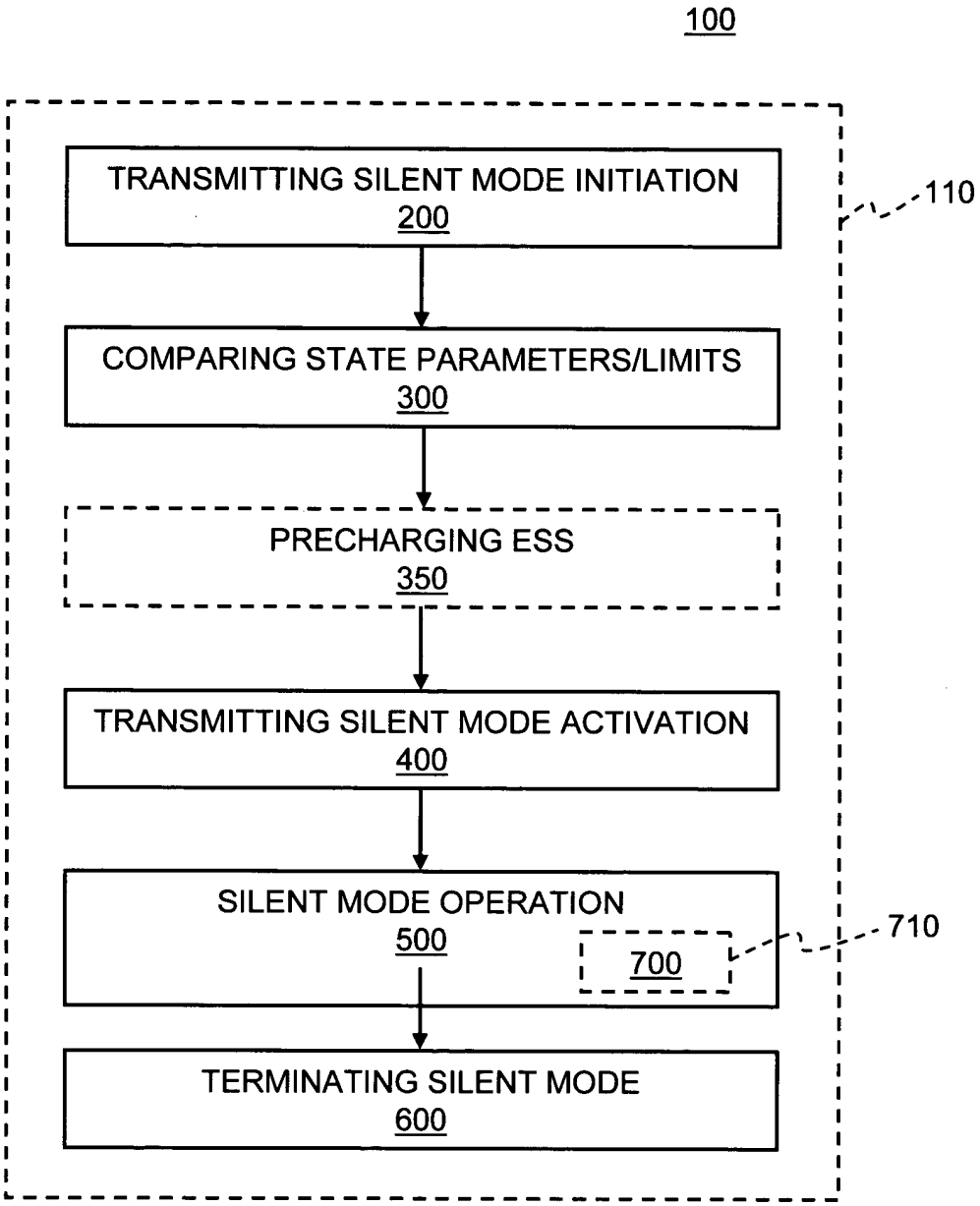

100
TRANSMITTING SILENT MODE INITIATION
200
110
COMPARING STATE PARAMETERS/LIMITS
300
PRECHARGING ESS
350
TRANSMITTING SILENT MODE ACTIVATION
400
SILENT MODE OPERATION
500
700
710
TERMINATING SILENT MODE
600

FIG. 4

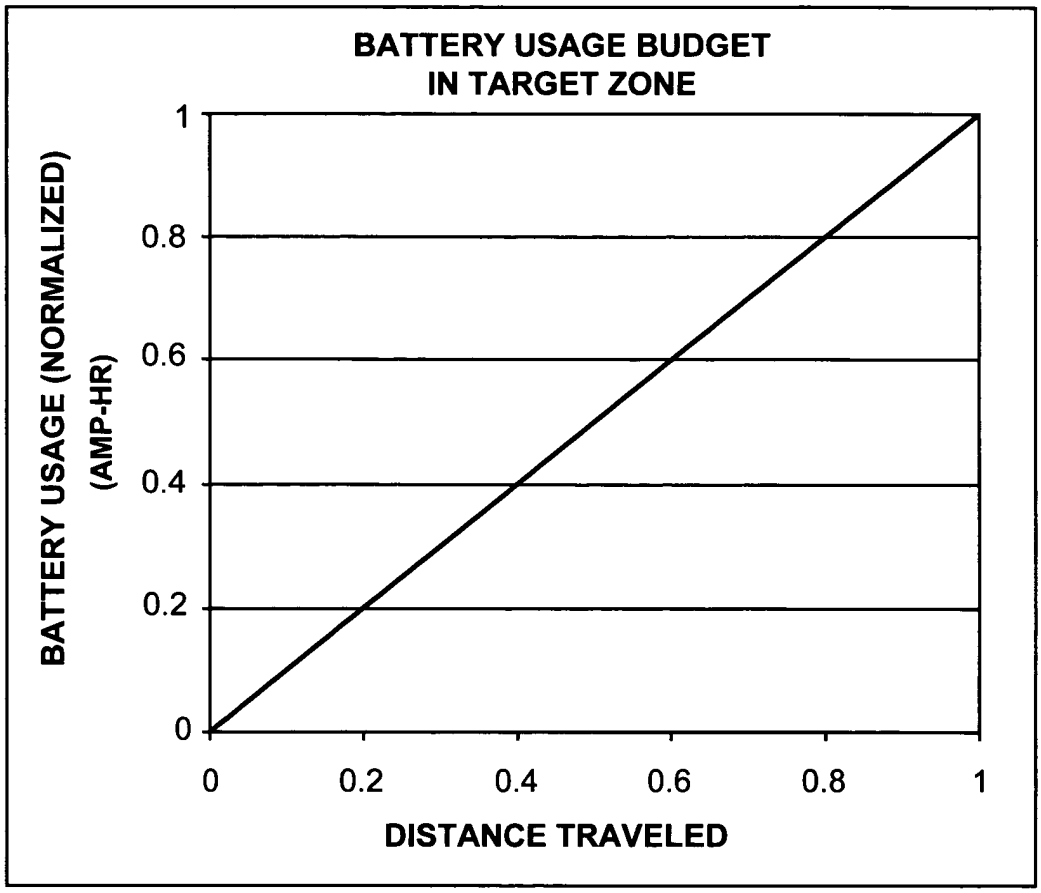

BATTERY USAGE BUDGET
IN TARGET ZONE
BATTERY USAGE (NORMALIZED)
(AMP-HR)
1
0.8
0.6
0.4
0.2
0
0
0.2
0.4
0.6
0.8
1
DISTANCE TRAVELED

FIG. 5

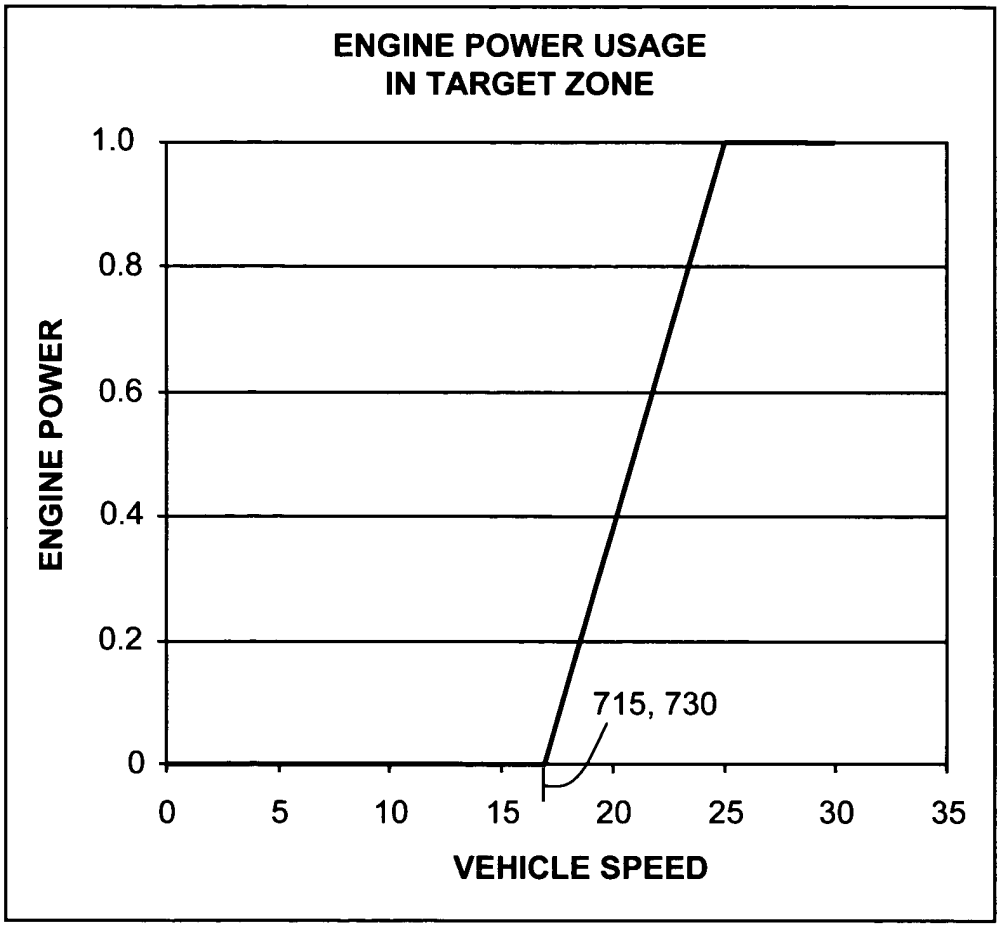

ENGINE POWER USAGE
IN TARGET ZONE
ENGINE POWER
1.0
0.8
0.6
0.4
0.2
0
715, 730
0
5
10
15
20
25
30
35
VEHICLE SPEED

FIG. 6

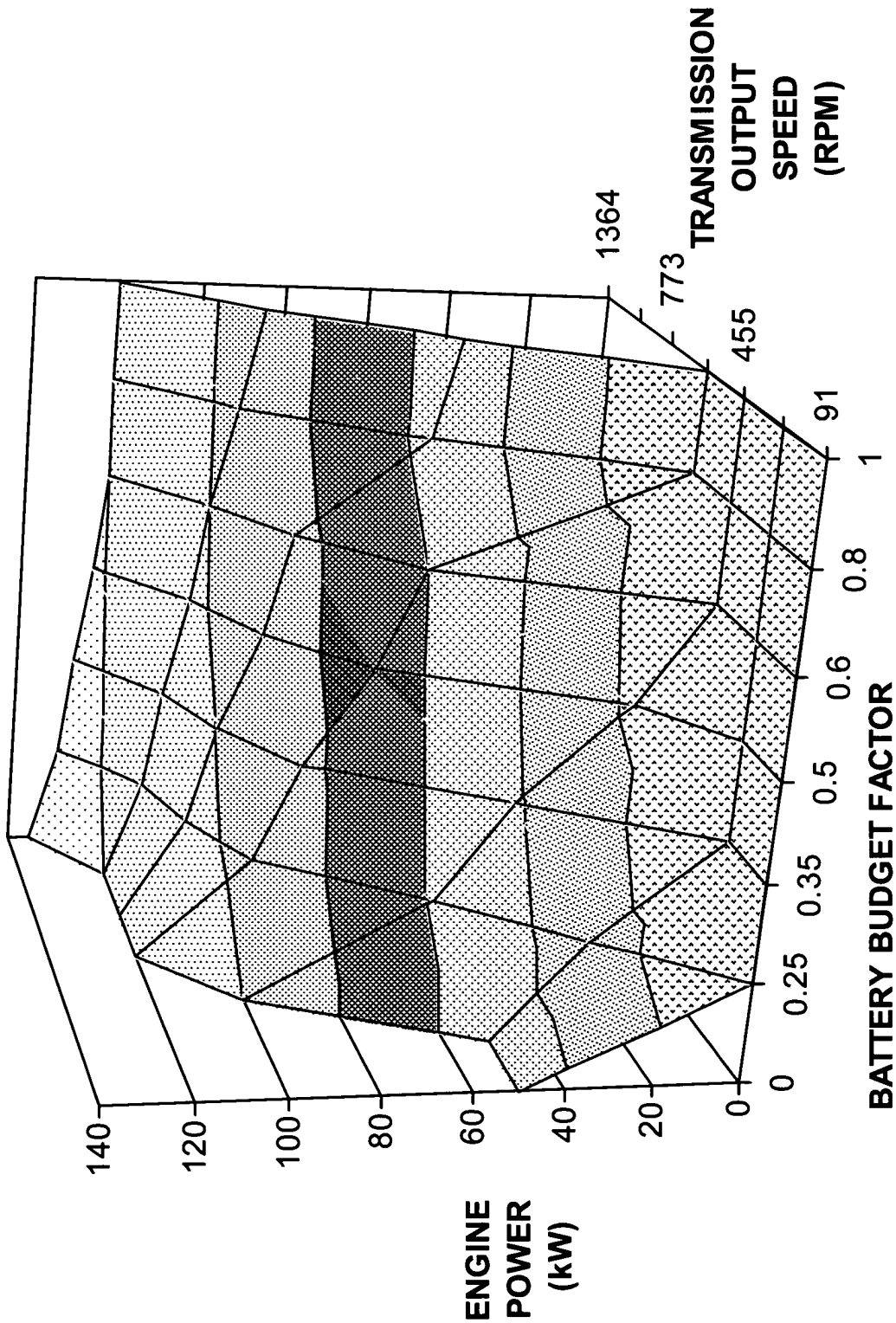

ENGINE POWER (kW)
140
120
100
80
60
40
20
0
BATTERY BUDGET FACTOR
0
0.25
0.35
0.5
0.6
0.8
1
TRANSMISSION OUTPUT SPEED (RPM)
91
455
773
1364

FIG. 7

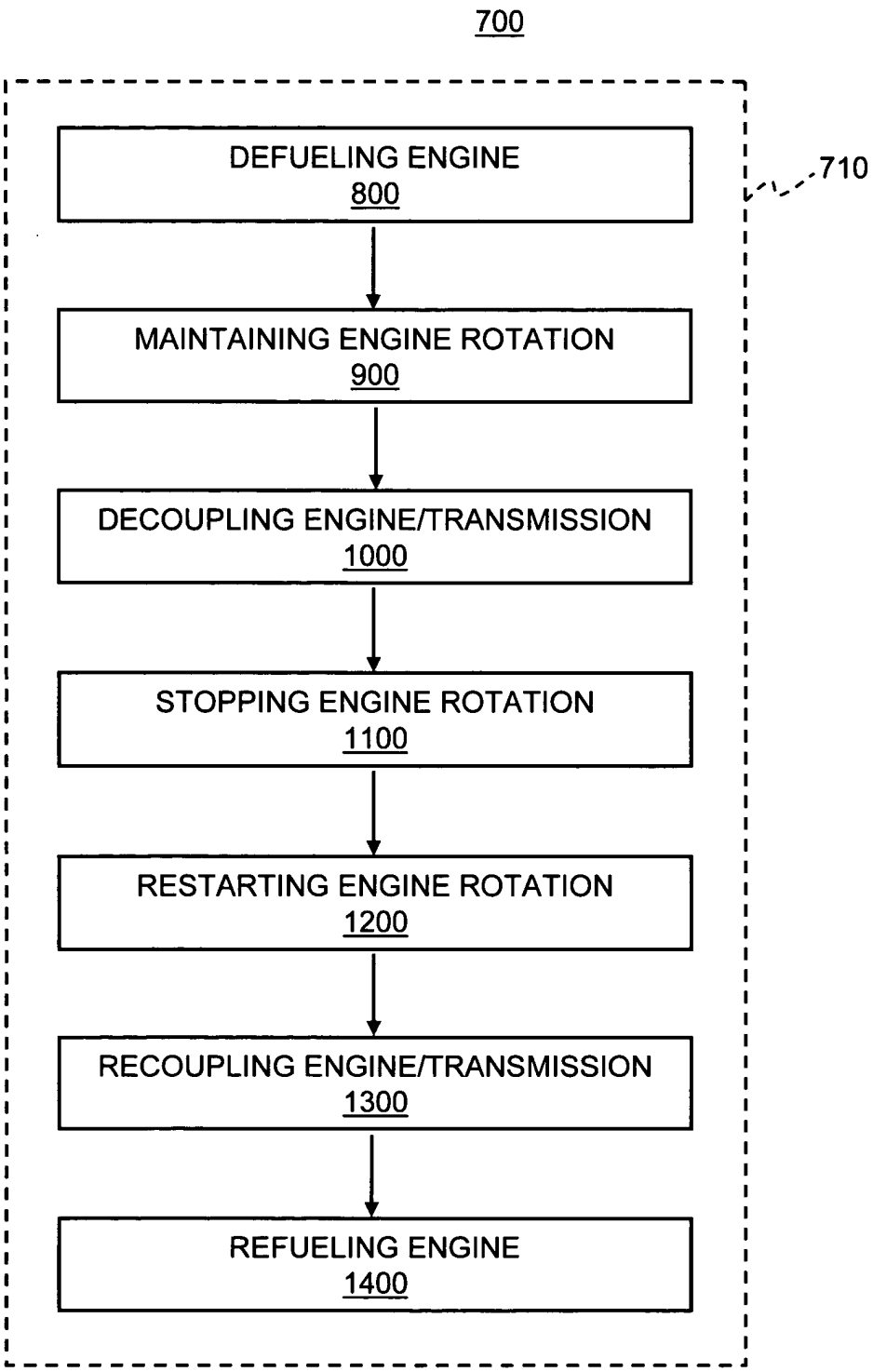

700
DEFUELING ENGINE
800
710
MAINTAINING ENGINE ROTATION
900
DECOUPLING ENGINE/TRANSMISSION
1000
STOPPING ENGINE ROTATION
1100
RESTARTING ENGINE ROTATION
1200
RECOUPLING ENGINE/TRANSMISSION
1300
REFUELING ENGINE
1400

FIG. 8

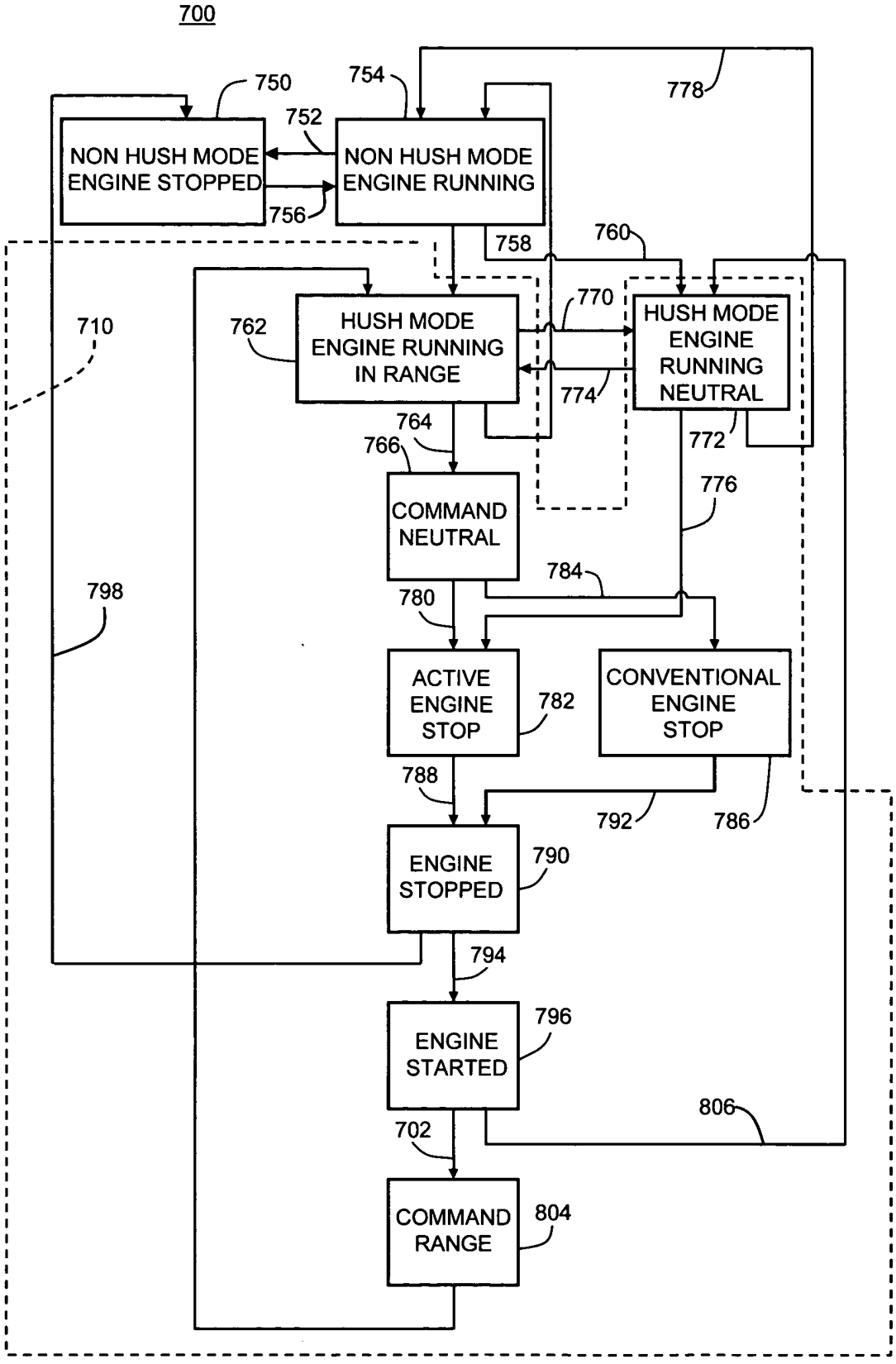

700
750
754
778
752
NON HUSH MODE ENGINE STOPPED
NON HUSH MODE ENGINE RUNNING
756
758
760
710
762
HUSH MODE ENGINE RUNNING IN RANGE
770
HUSH MODE ENGINE RUNNING NEUTRAL
774
764
766
772
776
COMMAND NEUTRAL
784
798
780
ACTIVE ENGINE STOP
782
CONVENTIONAL ENGINE STOP
788
792
786
ENGINE STOPPED
790
794
ENGINE STARTED
796
806
702
COMMAND RANGE
804

FIG. 9